Polycentrism and Metropolization in the Administrative and Planning Regions of the Coffee Belt

Policentrismo y metropolización en la Región Administrativa y de Planificación Eje Cafetero

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Abstract

This chapter presents the results of a research exercise that addressed the characterization of the Coffee Belt APR, from a morphological and functional perspective, and the study of the existing metropolization relations based on the observed demographic dynamics. Regarding the results, the APR is

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configured as a polycentric region with four main nuclei, the departmental capitals and the municipality of La Dorada, capitals that exercise a prima facie condition in their departments and that from their hierarchy have promoted metropolitan processes around them.

Keywords: Polycentrism, Metropolization, Urban Hierarchies, Region, Regionalization.

Resumen

En este capítulo se presentan los resultados de un ejercicio de investigación que abordó la caracterización de la RAP Eje cafetero, desde una perspectiva morfológica y funcional, y el estudio de las relaciones de metropolización existentes con base en las dinámicas demográficas observadas. En cuanto a los resultados, se evidenció que la RAP se configura como una región policéntrica con cuatro núcleos principales, las capitales departamentales y el municipio de La Dorada, capitales que ejercen una condición primacial en sus departamentos y a partir su jerarquía han impulsado procesos metropolitanos a su alrededor.

Palabras Clave: Policentrismo, Metropolización, Jerarquías Urbanas, Región, regionalización.

1. Introduction

Since the promulgation of the Organic Law of Territorial Ordering (OLTO), in Colombia, the Administrative and Planning Regions (APR) from the Caribbean, Pacific, Coffee Belt as well as the Central Region Special APR (S-APR) have been formed. In this context of integration, it was considered fundamental to advance in studies that help the characterization of the Coffee Belt APR, exploring its centralities and urban hierarchies, as elements that affect the territorial cohesion and serve the strategies of territorial ordering that is configured.

On the other hand, in the Coffee Region APR, a series of urban agglomeration processes are taking place with a wide dynamic of metropolization (Gaviria, 2018), a term that alludes to a type of socio-spatial interrelation of a main city with the urban centers and the surrounding rural area, in which the main city establishes strong relations of interdependence with its surroundings, even before its physical fusion, to the point that a wider socio-spatial unit is configured that exceeds the political-administrative limits. This reality makes it necessary to study these spatial phenomena, especially because it is desirable that the formalization of metropolitan areas that is being promoted in the region should correspond to the processes of metropolization experienced by territorial entities.

This chapter presents the results of a research exercise that addressed the characterization of the Coffee Belt APR, from a morphological and functional perspective, and the study of the existing metropolization relations based on the observed demographic dynamics. Regarding the results, the APR is configured as a polycentric region with four main nuclei, the departmental capitals and the municipality of La Dorada, capitals that exercise a prima facie condition in their departments and that from their hierarchy have promoted metropolitan processes around them.

2. Methodology and Sources

The process of characterization of the Coffee Belt APR was based on the methodological developments of quantitative geography for spatial analysis, which considers morphological and functional approaches; the first one, associated to a static vision and form directs its look to the distribution of the population masses on the space and defines as centers those parts of the urban system with greater occupation threshold in number of inhabitants. The second, in a more dynamic perspective that has its origin in the Central Place Theory (CPT), starts from a criterion of functionality

and considers the centers as the units with the greatest order in that system, characterized by providing the highest level of goods and services and performing the main functions in the urban hierarchy. The relevance of these approaches derives especially from their use in geography as an analytical tool for identifying urban centers and sub-centers, in a study agenda that, although still fragmented and dispersed, is considered a research program around polycentrism (Boix & Trullén, 2011).

In this way, the identification of the centers of the Coffee Belt APR was done based on population thresholds and functionality levels of the municipalities. For the former, information from the 1985 to 2018 population census, carried out by the National Administrative Department of Statistics (DANE in Spanish), was used. Likewise, to demonstrate conditions of inequality in the weight and size of the population among the municipalities, the indexes of inequality in the size of the cities (q) were estimated and obtained from the principle of "range-size" (Pumain & Saint-Julien, 2014), and of urban primacy (UPFCI) [4].

For the functional categorization of the municipalities of the APR, a function scale was constructed, which had as a reference a list of 70 functions and the classification proposed for the study of the Coffee Belt Ecoregion (Corporación Alma Mater, et al., 2002), using the data on the presence of functions provided by the planning offices of the municipalities. With this information the weighted index of centrality was calculated, which considers the relative weights of the functions found[5].

Finally, the observation of the processes of metropolization present in the APR was done through the Metropolitan Intensity Index (MII), which provides evidence on these phenomena

4 Urban Primacy Four-City Index, which establishes the relationship between the population of the first municipality and the population of the three following municipalities in size.

5 P_i: function weight "i", F_i: frequency of function "i" in the system, N: combined value of centrality, a constant that is assumed to be equal to 100; then, $!_{..} = \$\&\%_{..}$. The city's centrality index (C) "j" is defined as: $'=\Sigma!_{.,j}$; con P_{ij}: function i with presence in the city j.

and allows identifying their evolution in the established time horizon (León & Ruiz, 2016). In this sense, the MII explains the transition between urbanization and metropolization, and its construction considers "the relationship between the population of the metropolitan area [MA] (inhabitants of the metropolitan municipalities [M] and the core city [N]) and the population of the core city [N]" (Ruiz, 2015, p. 83). The index was calculated using the 1985-2005, 2018-2020 and 2005-2017 population projections produced by DANE.

3. Data analysis and results

In its evolution, the MII reflects 3 phases of the metropolization process. An MII with values greater than or equal to 2 and a negative slope of the curve that describes it reveals a phase of consolidation of urban concentration, in which the core city grows at a higher rate than the rest of the metropolized municipalities; values between 1 and 2 and a negative slope show a stage of transition to metropolization, in which some municipalities other than the core show changes in the dynamics of growth; finally, values greater than 1 and a positive slope highlight a phase of initiation and subsequent metropolitan consolidation (MII > 2), in which the population of the metropolized municipalities begins to grow at a faster rate than the core city.

3.1. Regionalization in Colombia and in the Coffee Belt.

The term region describes spatial phenomena at various scales of supranational and subnational order (Soya, 2014). The social sciences assign full relevance to it given its role as a frame of reference for the analysis and action in territories, although it is a category that does not offer a conceptual unit that favors its understanding; however, its more general definition alludes to a

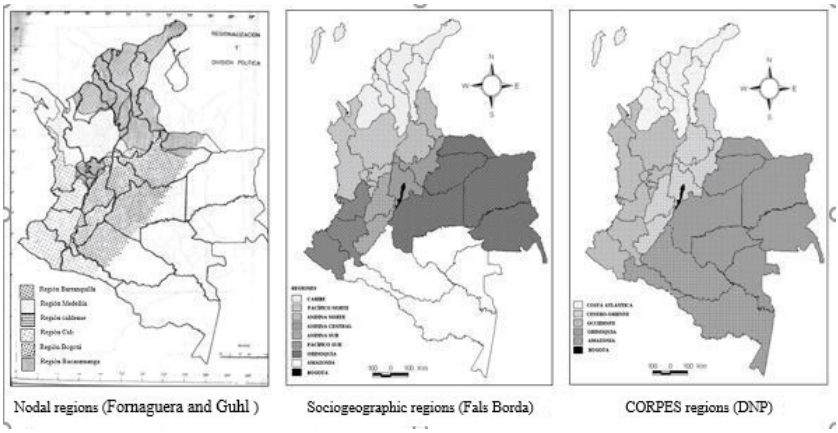
geographic space that has similar characteristics associated with shared identity, environmental, social, cultural, historical and/or economic features[6].

Under these considerations, regionalization, understood as the classification of geographic spaces based on previously defined differentiation criteria, is important for the description, analysis and understanding of the socioeconomic phenomena that occur in space, as well as for the formulation of development policies, inasmuch as "it is unquestionable that human, social, cultural and economic phenomena are ordered in geographic space, leave their marks on it, and are intimately related to the physical and biological ordering that occurs in that same space" (Fornaguera and Guhl, 1969, p.11).

In Colombia, in addition to the political-administrative division into two levels (which until the end of the last century considered the departments, councils and police stations on one side and the municipalities on the other, and which today is simplified to departments and municipalities), there have been different regionalization exercises as a product of this conceptual diversity, among which the pioneering proposal developed by Fornaguera and Guhl (1969) stands out, which adopted "urban epicentrism" as a criterion and considered the areas of influence of the main urban centers; the work of Fals Borda (1996) who adopted a sociogeographic perspective based on local history and culture; and the various regionalization exercises led by the National Planning Department, which served as the basis for the formation of the CORPES planning regions (Chamorro, 1997) through Law 76 of 1985 (Figure 1).

6 Other studies (Czerny, 2008; Figueras, Capello & Moncarz, 2009; Tomadoni, 2016, Vázquez & Propín, 2001) share the same conclusión.

Figure 1. *Colombia. Regionalization proposals*



Source: Fornaguera and Guhl (1969), Barón (2002).

The CORPES constitute the most immediate reference of the APRs, in the sense of its configuration from departments with geographical continuity and with purposes of joint regional development. The APRs are organized on the basis of territorial associations, whose normative reference is basically contained in the National Constitution, Articles 86 and 306, which define territorial autonomy and guide their formation; Law 136 of 1994, which allows territorial entities to jointly organize the provision of services and the execution of works of a local nature; Law 489 of 1998, which opens up the possibility for public entities to become members through inter-administrative agreements; and Law 1454 of 2011, the Organic Law on Territorial Ordering (OLTO), which establishes as a guiding principle of territorial planning, associativity for the generation of synergies, competitive alliances and economies of scale, conceiving the territory as a dynamic process of social construction.

There are four APRs in Colombia, the first of which was the Central Region S-APR comprising the departments of Boyacá, Cundinamarca, Meta, Tolima and Bogotá. The remaining are the Pacific APR, which associates the departments of Chocó, Valle del

Cauca, Cauca and Nariño; the Caribbean APR, which includes the departments of the Atlantic coast, and the Coffee Belt APR, composed by the departments of Caldas, Quindío and Risaralda, whose geographical position and spatial, cultural and productive proximity allowed them to generate development axes around the production and commercialization of coffee (Valencia, Cortázar, & López, 2013).

The purposes of regional integration in the Coffee Belt were expressed in different previous associative efforts, among which stand out the public-private alliances of a supramunicipal nature (Rodríguez and Arango, 2004) for the regional management of solid waste, the development of the forestry sector -Pacofor-, the sustainable management of the guadua and the Natural National Park Los Nevados -NNPLN-, the regional mitigation of seismic risk, and the Innovation -EJE INNOVA-, among others; the Territorial Pact for Employment, which in 2010 brought together the three capital cities around this problem (Candia, Riffo, Sandoval and Williner, 2015); the initiatives for the creation of the Ecoregion of the Coffee Belt and the conformation of metropolitan areas in the conglomerates of cities around Manizales and Armenia; the management for the declaration of the Coffee Cultural Landscape before the UNESCO.

The Coffee Belt Administrative Planning Region (APR) is an opportunity to consolidate these efforts. It constitutes an associative figure that institutionally strengthens the region in the management of its development, by promoting the coherence and articulation of planning among the departmental entities that make it up, through the design and execution of programs and projects of mutual interest; at the same time it favors its configuration as a territory based on the strengthening of the territorial identity of its population.

A territory is structured and organized on the basis of the relationships established by human beings, among themselves and with the space that is occupied and possessed. In this respect, in a recent approach to the daily experience of social actors with different roles and municipalities of residence (Gaviria, 2020), it became evident that the spatial dimension that they adopt and with which they identify themselves in relation to the "others" is the Coffee Belt; which stands as the primary socio-spatial reference of belonging, from which the existence of a "we" is perceived and for which an image of the future is shared in which the preservation of natural wealth, green and coffee culture stand out as central elements.

The Coffee Belt is evoked by social actors as a historical region whose characteristic landscape, cultural and economic features act as common repertoires of pride; its name reveals a necessary condition, coffee as a cultural framework of a social and spatial construction. In addition, in the collective imagination of the actors, this region appears as the primary notion of what was Gran Caldas, and it is kept alive in the evidence of the maps produced by their mental elaborations. Furthermore, they come to it as a traditional reference space in a sustained way.

In this way, the conformation of the Coffee Belt APR responds to the territorialities present in it. In the task of strengthening territorial cohesion that gives a missionary sense to the process of territorial association undertaken, it is essential to appeal, among other fundamental references, to the culture of coffee, which was identified as another essential symbol in the definition of "we" (Gaviria, 2020).

The dynamic observed received a fundamental boost with the issuance of the Law of Regions (Law 1962 of June 28, 2019), which ratifies the State's intention to develop its functions using the figure of the regions to plan, organize and execute its activities; it sets the organic standards for the strengthening of the APRs and

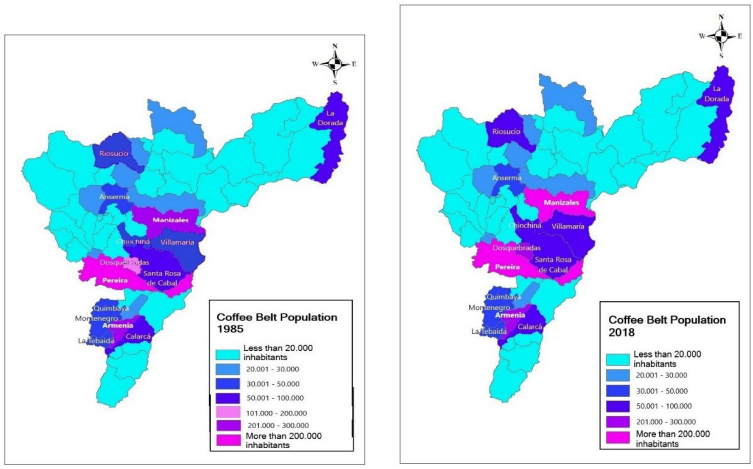
defines the conditions and procedures for their conversion into regions of territorial entities (RTE), with their own authorities, the possibility of access to resources and participation in the national budget, in addition to greater interference in planning. In this way the Coffee Belt will be strengthened in its task of promoting competitiveness, idiosyncrasy and regional facts.

3.2. The Urban Hierarchy in the Coffee Region APR

The morphological perspective focuses its attention on the distribution of the population, considering as main regional centers those territorial entities with the greatest number of inhabitants (Figure 2). From this perspective, a regional urban system is evident in which the capital cities Pereira and Manizales stand out as the main centers, while Armenia shares with the municipality of Dosquebradas a condition closer to that of a subregional center, the latter thanks to its recent population dynamics.

The works of Zambrano and Bernard (1993), Cuervo and González (1997) and Pachón (2013) reveal the historical process of the formation of the system of cities in the Coffee Belt and describe the consolidation of the three capitals as the main cities of the western section of the central mountain range, through a process associated with the dynamics of industrial expansion, coffee production and the development of road infrastructure; cities from which an urban network has been strengthened, taking advantage of the spatial proximity and the historical and economic closeness. This suggests reviewing other approaches to identify the centers of a region with historical and economic roots, such as the Coffee Belt APR

Figure 2. *Coffee Belt APR, evolution of population mass distribution according to intervals, 1985-2018*



Source: DANE, census and projected population. Made by authors.

In the functional approach, municipalities were categorized according to the number and specialization of the commercial functions and services they provide. For this exercise the list of functions and the scale defined in the study of the Ecoregion was used (Alma Mater Corporation, et al., 2002); derived from this the three capital cities observed a character of main centers at the regional level, a condition that is also reached by the municipality of La Dorada (Table 1). In the opposite situation, the municipalities that are conurbated to the capitals, such as Dosquebradas, Villamaría and Calarcá observe a low functionality that only allows them to be classified as urban centers, the first one, or intermediate sub-regional centers, the others.

Table 1. *Coffee Belt APR, functional order of urban units, 2018*

Functional order	*Function range*	*Municipalities in spatial formation*
Main Regional Centers	58 or more	Manizales, Pereira, Armenia, La Dorada.
Major Sub-Regional Centers	from 50 to 57	
Intermediate Sub-Regional Centers	from 43 to 49	Santa Rosa de Cabal, Riosucio, Salamina, Calarcá, Anserma, Supía, Villamaría
Urban Centers	from 36 to 42	Neira, Montenegro, San José, Manzanares, Risaralda, Aguadas, Palestina, Quimbaya, Chinchiná, Marquetalia, La Tebaida, Marulanda, Dosquebradas, Marmato, Pensilvania
Rural Service Centers	from 30 to 35	Apía, Salento, Filadelfia, Circasia, Filandia, Guática, Belén de Umbría
Rural Centers	less de 30	Victoria, Pijao, Pácora, Marsella, Belalcazar, Pueblo Rico, Norcasia, Génova, Balboa, Buenavista, Córdoba, Aranzazu, Santuario, La Virginia, La Merced, Quinchia, Mistrató, La Celia, Samaná, Viterbo.

Source: By authors based on information provided by the planning offices of the municipalities of the Coffee Belt APR in November, 2018.

The above shows a functional configuration close to that proposed by the Central Place Theory, which based on the assumption of isotropic surfaces considers that settlements with lower functional orders are distributed more uniformly in the regional space and with greater proximity to the main centers; therefore these municipalities are highly dependent on the services and functions of medium and high complexity offered by their capital city. On the contrary, and close to that normative idea, La Dorada, a municipality more distant from the main urban agglomerations of the region, observes a widely superior functional centrality.

A more integral perspective for qualifying the functional hierarchy of municipalities is the weighted index of centrality. This index allows for the measurement of functional complexity in terms not only of the number of functions in a site, but also of their frequency of occurrence. That is, for its calculation, the functions are assigned a weight in inverse proportion to the frequency with which they are present in the cities of the system, so that the higher the index, the greater the functional complexity of that city

(Table 2). This new index confirms that the municipalities with the highest level of centrality in the Coffee Belt APR are the capital cities (Pereira, Armenia and Manizales), while the municipality of La Dorada continues to stand out as a regional center in the east of the department of Caldas.

Table 2. *Coffee Belt APR, weighted index centrality index, first nine municipalities.*

Municipality	*Centrality index (2018)*	*Position by population size (2018)*
Pereira	**579,95**	**1**
Armenia	**467,83**	**3**
Manizales	**418,84**	**2**
La Dorada	**344,49**	**6**
Villamaria	**182,43**	**9**
Calarcá	**180,57**	**5**
Dosquebradas	**169,22**	**4**
Supia	**168,80**	**20**
Riosucio	**164,20**	**8**

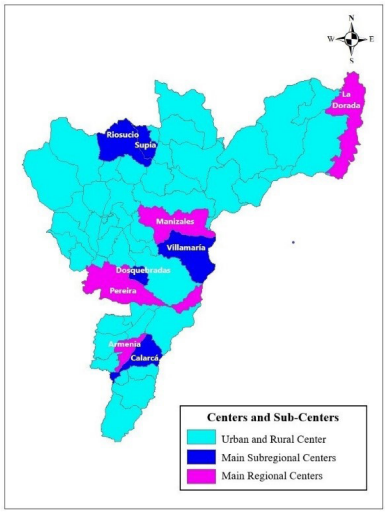
Source: By authors based on information of the planning offices of the municipalities.

Then, in a more dynamic perspective, offered by the functional approach, the three capitals Pereira, Manizales and Armenia stand out as main regional centers. Although La Dorada does not have one of the largest populations in the region, the broad functional performance allows this municipality to qualify as a major regional center in its eastern zone. In a different sense, although Dosquebradas is the fourth municipality in population and an important economic activity is concentrated there, the low number of functions that it houses only allows to qualify it as a sub-regional center; a condition that, by combining morphological and functional criteria, it shares with its similar Calarcá, Villamaría, Riosucio and Supía.

Figure 3 shows the regional and sub-regional centers defined on the basis of the functional criterion. These are largely concentrated in the urban agglomerations around the capital cities; however, in the department of Caldas there is evidence

of a better spatial distribution of these urban hierarchies, a condition that benefits the populations of the northwestern and northeastern areas of the region. In any case, as shown in the figure, the distribution of the central places of first and second order in the RAP Eje Cafetero favors the accessibility of all the inhabitants for the attention of their diverse needs.

Figure 3. *Coffee Belt APR, regional centers and sub-centers, morphological and functional perspectives.*



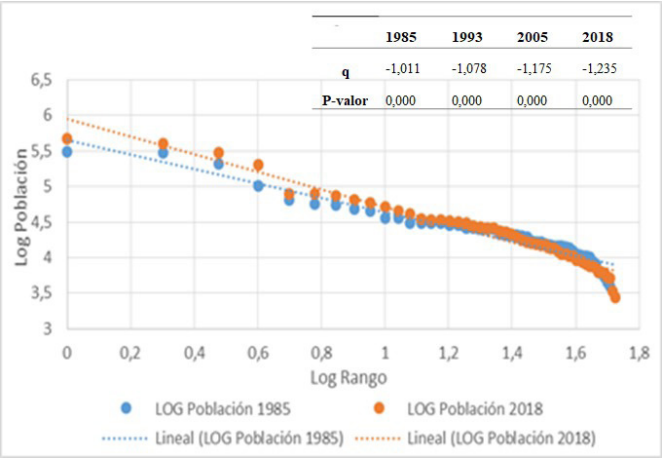
Source: By authors

To observe urban hierarchies, the index of inequality in the size of cities (q) was estimated from the rank-size principle, which reveals the conditions of distribution of the population of the APR (Pumain & Saint-Julien, 2014). The results show an increasingly unequal distribution of this population among the municipalities ($q > |1|$), which warns of the presence of primary conditions in the region; however, this parameter is located in the average of contemporary urban systems, which according to Pumain & Saint-Julien fluctuates between $|0.7|$ and $|1.3|$ (Figure 4).

The Urban Primacy Four-City Index (UPFCI) was calculated at the level of the departments and the RAP, taking in the latter case Pereira as the main city (Figure 5). In general, the primary conditions of the three capitals are higher than those of Bogotá at the national level, but significantly lower than those of other cities such as Cali and Medellín in their territorial entities (Gaviria 2017). On the regional scale, although Pereira's primacy index is very low and lower than that of cities such as Bogotá and Cali in the Central and Pacific RAPEs respectively (Rubiano-Bríñez, & Eligio-Triana, 2019), it has observed a growing trend during the study period.

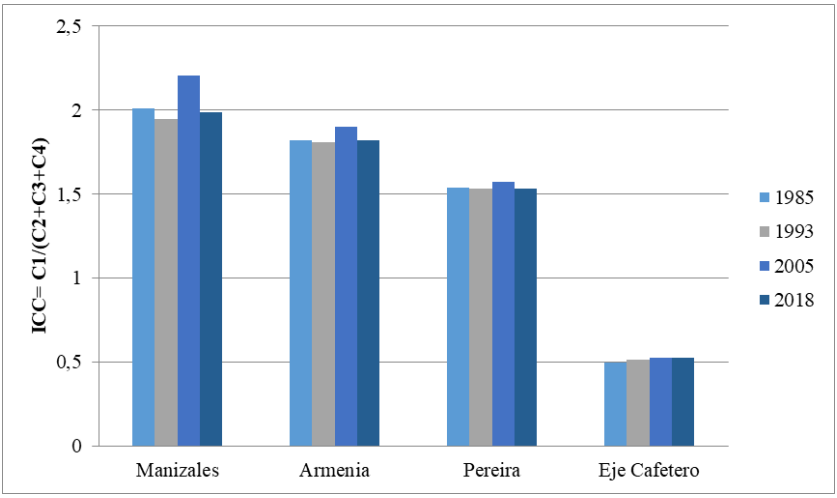
Then, from the urban hierarchies, this last one shows, on the one hand, that the Coffee Belt APR is configured as a polycentric region with the presence of three primary cities, the three department capitals; and on the other hand, in spite of that shared primacy, the marked hierarchical ascendancy of the city of Pereira, whose population grows at higher rates than those exhibited by the cities of Armenia and Manizales, could lead to configure it in the medium term as the primary city of the RAP Eje Cafetero.

Figure 4. *Coffee Belt APR, range-size ratio, 1985-2018*



Source: DANE, calculations made by authors.

Figure 5. *Coffee Belt APR, Urban primacy indexes, 1985-2018*



Source: DANE, calculations made by authors.

3.3. Metropolization Dynamics of the Coffee Belt APR

The urbanization of the planet is a millennial history that has known important variations in space and time and that began to harmonize globally in the 15th century, when the European conquest of the world was accompanied by the foundation of cities and ports that established the first structure of a world urban network linked by exchanges of people, goods and information. The industrial revolution altered this network from the 19th century onwards by introducing new production and transport systems that triggered a rural exodus to the city (Monnet, 2009). As a result, the urbanization process and the formation of metropolitan areas is one of the most representative phenomena of the 20th century.

In the era of globalization, the new pattern of territorial dispersion offers a wide range of possibilities for incorporating small cities and rural peripheries into the direct influence of a major city. Moura (2009) interprets this spatial and urban

phenomenon as metropolization, a process of urban expansion that, although expressed in agglomerated morphologies, is also a phenomenon through which society and urban life penetrate the immediate regional space and disseminate a way of life that involves systems of objects and systems of values.

On the Coffee Belt, authors such as Alfonso (2012, 2017) and Gaviria (2018) argue from different perspectives about the existence of three processes of metropolization in the region; which have as a nucleus the departmental capitals, to which the nearby municipalities are articulated through relationships of economic, social and cultural order. Alfonso considered the long-term population movements or "lifetime migrations", captured by the 2005 population census in the changes of residence, from which he calculated a metropolization index that compares the proportion of immigrants from the main nucleus to the metropolized municipality with respect to the total number of residents in the latter, with a similar proportion but referring to the total of the metropolitan area; on the other hand, Gaviria observed the short-term, or daily, flows as evidence of spatial interaction between the municipalities, through the daily passenger traffic of 2013.

Table 3. *Coffee Belt, metropolitan areas*

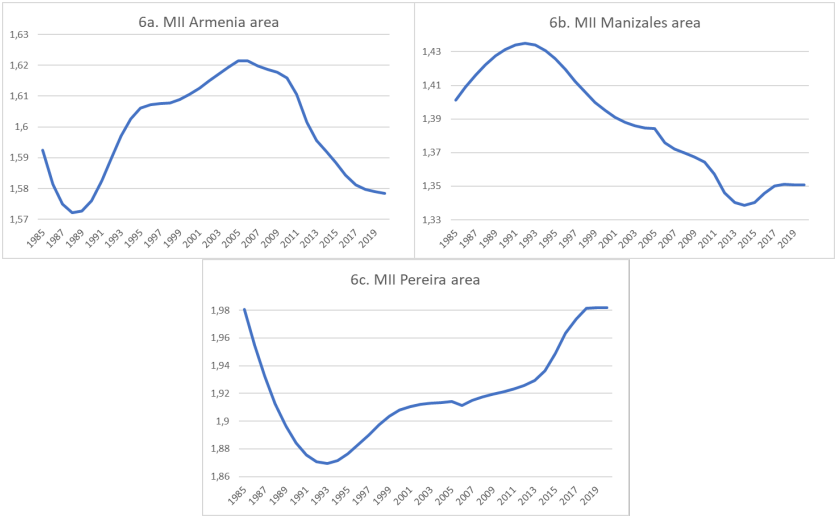
Metropolitan nucleus	***metropolitan municipalities***	***Population 2018****		
		Metropolitan nucleus	**Metropolitan municipalities**	**Total**
Pereira	Dosquebradas, La Virginia, Santa Rosa de Cabal y Cartago	467.269	458.668	925.937
Manizales	Chinchiná, Neira, Palestina y Villamaría	434.403	152.502	586.905
Armenia	Calarcá, La Tebaida, Circasia y Montenegro	295.208	171.147	466.355

Source: DANE, made by authors based on Alfonso (2012, 2017) y Gaviria (2018).

As a complement to the previous observations, the Metropolitan Intensity Index (MII) provides new evidence on the phenomena of metropolization present in the region and allows for

the identification of the evolution of the process in the established time horizon (León & Ruiz, 2016). In this sense, the MII explains the transition between urbanization and metropolization, and it is structured as the relationship between the population of the metropolitan area [MA] (inhabitants of the metropolitan municipalities [M] and the core city [N]) and the population of the core city [N] (Ruiz, 2015). Using census data and population projections from DANE, the MII was constructed for the three metropolitan areas of the Coffee Belt APR for the period 1985 to 2020. The results are presented in Figure 6.

Figure 6. *Coffee Belt APR, MII of its metropolitan areas, 1985-*2020



Source: DANE, calculations made by authors.

Metropolization processes in core areas in Armenia and Manizales (Figure 6a and 6b) have shown little regularity. In the first case, although an accelerated transition to metropolization was observed between the end of the 1980s and the beginning of the 1990s, given the high convexity of the curve in that period, the process slowed down in the second half of the 1990s and did not manage to consolidate, while, before the MII reached values

close to 2, it began a decline that reflected a new dynamic of urban concentration, in which the core city grew again at a higher rate than the rest of the municipalities, and in net terms there were no significant migratory processes towards the peripheral municipalities. The end of the period analyzed marks a turning point that makes one foresee a reactivation of the metropolization process.

The rising curve at the end of the 1980s of the MII for the metropolitan area with a core in Manizales (Figure 6b) shows a phase of beginning of the dynamic of metropolization, which is interrupted prematurely in the 1990s and gives way to a new process of urban concentration in the core city. Similar to the previous case, in the last years of the period analyzed there is a point of inflection and the MII curve acquires a convexity that shows a reactivation of the metropolization process, with the presence of population migration from the capital to its nearby municipalities[7].

According to the behavior of its MII (Figure 6c), in the metropolitan area whose nucleus is Pereira there has been a clearer transition from a process of urban consolidation to one of metropolization with a tendency towards consolidation; a dynamic in which some metropolized municipalities, such as Dosquebradas, are beginning to grow their population at a faster rate than the nucleus. The convexity of the MII curve shows a greater speed of the metropolitan process in the nineties, while in the course of this century it has been slower, but with values close to 2 that trace a path towards the consolidation of this urban phenomenon.

In summary, the results obtained in the MII of the three metropolitan areas of the Coffee Belt APR show the existence of a clear metropolitan process around Pereira, while metropolitan

7 According to the DANE (2019b), in the five years prior to the 2018 census, Manizales presented a net migration of 4554 inhabitants to the metropolitan municipalities.

dynamics are interrupted in the areas of Armenia and Manizales. In none of the analyzed areas has the MII reached a level higher than 2, which rules out phenomena of population deconcentration in the region that could significantly alter the existing primatial structure.

4. Conclusions

The Coffee Belt APR shows characteristics that make it possible to see in it a territory that advances in its construction. This region, repeated in the collective imagination of its population as a primary notion of what was the Gran Caldas, is still alive as evidenced by the maps that are the product of the mental elaborations of its inhabitants, who in a sustained way come to it as a traditional reference space.

This Coffee Belt APR is organized as a polycentric region with four main nuclei, among which the city of Pereira increases its population size compared to the cities of Manizales and Armenia and the municipality of La Dorada is configured as a relevant population center in the emerging territory.

This polycentric condition of the Coffee Region APR is mainly related to coalescence processes by fusion, in which the capital cities have extended their functionality to the surrounding municipalities and fulfill a role of main centers with clear interrelations, based on their historical, geographical and cultural proximity and their economic and institutional links.

The capital cities of the APR exercise a prima facie condition in their departments and from their hierarchical condition metropolitan processes have developed around them, a situation that has resulted in the continuous growth of the resident population in the municipalities subject to metropolization. According to what has been observed through the metropolitan intensity index (MII), these processes have emerged since

before 1985 and have developed with greater continuity in the metropolitan area with a nucleus in Pereira; in the cases of Manizales and Armenia, although these cities exercise primacy in their departments and are configured as metropolitan nuclei, a still incipient and discontinuous process is observed.

One of the strategic axes in the configuration of the Coffee Belt APR is the organization and territorial foresight (Government of Caldas, Government of Quindío, Government of Risaralda, 2018), which is the basis for an adequate and coherent territorial management. As a contribution to this task of planning and foresight, the study offers evidence on the distribution of the most important centers in the system of cities in the region, warns about the dynamics observed in the urban hierarchy and sheds light on the processes of expansion and the formation of new urban morphologies through the phenomena of metropolization that have the capital cities as their nucleus.

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